Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Jungh. & De Vriese, with poor specimens the affinity of this species was not certainly determined.—34. *P. Pyrenaica*. Lapeyr. fide Parlatore, not to be confounded with 48, *P. Laricio*, Poir., as has been done, even by Lapeyrouse himself.—39. *P. Montezumae*, Lamb., species not sufficiently circumscribed.—43. *P. Engelmanni*, Carrière. Wislizenus brought a single specimen from the mountains west of Chihuahua.—46. *P. Canariensis*, Ch. Smith, perhaps more nearly related to *P. Laricio*, Poir. The articulation of the four involucral bracts is a curious feature which it has in common with our *P. resinosa*, Ait.—53. *P. Murrayana*, Balf., is only a broader leaved mountain form of *P. contorta*, Doug,—56. *P. tuberculata*, Gordon, not of Don, which is a form of *P. insignis*, Doug.—67. *P. Pinaster*, Ait., except by the position of the female ament, more nearly allied to *P. Canariensis*, less so to *P. Laricio*.—74. *Pinus Elliotti*, Engelm., imperfectly known to Elliott, was rediscovered about ten years ago by Dr. Mellichamp, and is here fully described and illustrated.

§ 35. **Fresh Water Algae, IV.**

The pursuit of my recreation, the natural history of Fresh Water Algae, has revealed to me, during the past year, new points of interest in the development and growth of a few, and brought to light, out of their hitherto hidden abiding places, many which previously had not been recorded as dwelling in our land.

The following list of upwards of one hundred plants, embraces at least ninety which are new to the United States Flora, and of which eighteen were wholly unknown. About fifty were collected in New Jersey. This State, which has won a wide reputation for its peculiar richness in phenogamous plants, also appears in the small portion thus far explored, to be richly stocked with cryptogams.

When the locality is not given in the list, it is to be understood that the plant was found in the vicinity of Bethlehem, Pa. Some were collected in the neighborhood of New York, and others in Massachusetts, Connecticut, Iowa, Florida, etc.

To the collectors whose names are mentioned, I return cordial thanks, alike for what they have done, and for their promises of further favors. I am happy also in having several new volunteers, who await the opening of the season to begin their explorations. To O. Nordstedt, of Lund, Sweden, I am especially indebted for valuable suggestions, and for many desirable extracts from his extensive library of botanical works. FRANCIS WOLLE.

BETHLEHEM, PA., March, 1880.

PHYCOCHROMOPHYCEAE.

Oscillaria, Bosc.—O. subfusca, Vauch. Wet gneiss rocks.—O. Porettana, Menegh. Shaded limestone rocks.—O. tenuis, Ag. Dripping rocks. O. Grateloupii, Bory. Submarine waters, New York. Coll. R. Hitchcock.—O. subsalsa, Ag., *var.* dulcis, Ktz. Antigua, W. I. Coll. B. Romig.—O. natans, Ktz. Ponds, New Jersey.—O. Froellichii, *var.* phormidioides, Rabenh. Swartwout Lake, &c., New Jersey.

Phormidium, Ktz.—P. arenarium, Ag. Florida. Coll. J. D. Smith.

Microcoleus, Desmaz.—M. gracilis, Hass. Dakota, per Dr. Hobby of Iowa City.

Sphaerozyga, Ag.—S. Ralfsii, Thw. Ponds.

S. saccata, n. spec.—S. trichomatibus in thallis tubulosis, cylindrico-elongatis, simplicibus, decem plus minus aggregatis, unciam usque ad palmam longis, 2–3 lineas crassis, varie constrictis vel undulato-sinuosis, gelatinosis vel submembranaceis, mollibus, initio affixis, mox libere natantibus et multum contractis ; trichomatibus subrectis, paralleliter aggregatis vel leniter curvato-implicatis ; articulis oblongis, saepe subcylindraceis, aerugineis, arcte conexis ; sporis numerosissimis, cylindricis, sordide aerugineis, diametro 2–3–plo longioribus ; cellulis perdurantibus globosis vel ovalibus, articulorum diametro paulo vel duplo majoribus. Diam. art. 00016″–0002″. Spor. diam. 0003″ ; long. 0006″–0009″. Hab. in stagnis, New Jersey.

This plant was found freely distributed along the shores, and in the shallow waters of Cranberry Pond, N. J. It is peculiarly distinct in the cylindrical, vertical, sack-like growth of the thallus, one to three inches high.

Tolypothrix, Ktz.—T. Aegagropila, Ktz. Coll. J. S. Adam, Lime Rock, Conn.

T. bombycina, n. sp. T. castaneo-brunnea, trichomatibus pseudoramulisque leniter curvatis, laxe intricatis, elongatis, basi breviter concretis, internis brunneis ; modo distincte modo indistincte articulatis ; articulis subtilissime granulosis, diametro (.00048″–00055″) equalibus, vel duplo brevioribus ; vaginis arctis, luteolis, lævissimis ; cellulis perdurantibus, semper basilaribus, subglobosis, singulis, vel 2–3–seriatis.

Forms a dark brown silky stratum on wave-washed stones, along the shores of Hopatcong Lake, New Jersey. According to earlier authors this plant would be a *Calothrix.*

Gloiotrichia, Ag.—I have found a very singular form of propagation in a plant of this genus. The spore contents break through the base, enter into the heterocysts ; these enlarge, change color from yellowish to bright green, and thus become sporangia, which reproduce the gelatinous cysts in which the original form is developed.

CHLOROPHYLLOPHYCEAE.

Gloeococcus, A. Br.—G. mucosus, A. Br.

Dictyosphaerium, Naeg.—D. reniforme, Bulnh. Pond, N. J.—D. Ehrenbergianum, Naeg. Coll. R. Hitchcock, N. Y.

Caelastrum, Naeg.—N. sphaericum, Naeg. Ponds, N. J.

Ophiocytium, Naeg.—O. cochleare, A. Br., Ponds.

Eudorina, Ehrb.—E. elegans, Ehrb.

DESMIDIACEAE.

Closterium, Nitzsch.—C. Lunula, Muller. Common but not heretofore noticed.—C. decorum, Breb. Not infrequent.

Pleurotaenium, Naeg.—P. coronatum, Breb.—P. Ehrenbergii, Ralfs.

Spirotaenia, Breb.—S. obscura, Ralfs. Ponds, N. J.

Sphaerozosma, Corda.—S. secedens, De By., Brown's Mills, N. J.

Cosmarium, Corda. The following were collected in ponds, partly in New Jersey and partly in Penn.—C. sinuosum, Lund. A small variety.—C. tumidum, Lund.—C. tinctum, Ralfs.—C. Smolandicum, Lund.—C. sulcatum, Nordst.—C. venustum, Breb.—C. polygonum, Naeg.—C. homalodermum, Nordst. A small form. Coll. H. S. Kitchell, Conn.—C. parvulum, Breb.—C. cruciatum, Breb.—C. Ungerianum, Naeg.=C. oligogongrus, Reinsch.—C. Ralfsii, Breb.=C. Meriani, Reinsch, *var.* pentagona, Nordst.—C. Turpinii, Breb.—C. Hammeri, Reinsch.— C. anisochondrum, Nordst.—C. Thwaitesii, Ralfs, *var.* Holmiense. Coll. R. Hitchcock, New York.

Euastrum, Ehrb.—E. affine, Ralfs.—E. Pokornyanum, Grun.—E. abruptum, var. evolutum, Nordst.—E. binale, *var.* insulare, Wittr.

E. Donnelli n. sp. E. mediocre, late ovatum, longius quam latius ; medio profunde constrictum, sinu angusto lineari ; semicellulis trilobis ; lobis basilaribus, orbiculo-tumidis ; lobo polari subito contracto (semi-diametro) sub-hemisphaerico ; dorso subtruncato. Lobis singulis in margine cum mucronibus tribus vel quatuor armatis. Semi-cellulis singulis cum quinque tumoribus instructis ; tribus in seriem simplicem transversam in inferiore parte, duabus in superiore parte. Cytiodermate subtiliter punctato. Diam. long. .00216″ ; lat. 0018″. Hab. Florida. Coll. J. D. Smith.

E. formosum, n. sp. E. mediocre, diametro subduplo longius, ovale ; semi-cellulis sex marginalibus lobis, vel prominentiis ; sinibus introrsum rotundatis ; lobis in apice profundis trifidis, vel tridentatis ; dente centrali recto, et lateralibus divergentibus ; lobis inferioribus plus minus elementariis. Cytiodermate laevi. Diam. long. 0025″ ; lat. 0016″. Hab. Ponds, near Toms River, New Jersey.

Micrasterias, Ag.—M. mucronata, Dixon.—M. angulosum, Hantzsch.

M. Kitchellii, n. sp. – M. magna, circiter tam longa quam lata, sinu acuto, introrsum valde amplicato ; semi-cellulis profunde trilobis ; lobis basilaribus sub-conico-productis, oblique et late truncatis ; angulis duobus spinis divergentibus armatis ; lobo polari a lobis basilaribus sinu amplo ac rotundato discreto, vertice plus minus convexo, utrinque duabus spinis divergentibus armato. Diam. lobis basilaribus lat. .005″ ; lobis polaribus .003″. Cell. long. .005″.

The general outline of this plant is near *M. adscendens*, Nordst. found on the Sandwich Islands, but it is larger, the polar lobe is more exserted, and hence the sinuses between it and the basal lobes are much wider and deeper, broadly rounded, not "amplo-acutangulo." The angles are not bidentate, but are furnished with two diverging spines. Collected by H. S. Kitchell in a small pool adjoining Gelder's Pond, on Mt. Everett, Mass., about 1800 feet above sea level.

M. fimbriata, Ralfs, var. *nuda*, *n. var.* M. permagna orbicularis, laevis ; lobulis lateralibus plerumque obtusis, emarginatis, praeter lacinulam sinui proximam quae est paulum conico-producta, in apice duabus spinis divergentibus armata.

The peculiarity of this plant is in the absence of the fimbriae, or spines, except at the angles of the polar lobe, and on the apex of the subdivision next the sinus between the semi-cells. Occasionally one or another of the small subdivisions has rudimentary points. Having examined 25 to 30 plants all bearing out the same character, it is deemed worthy of a record. Collected in the same habitat with the preceding.

Staurastrum, Meyen,—St. muricatum, Breb.—St. rugulosum, Breb. —St. scabrum, Breb.—St. cyrtocerum, Breb.—St. brachycerum, Breb.—St. tricorne, Menegh.—St. leptocerum, Nordst.—St. cuspidatum, Breb.—St. asperum, Perty.—St. pygmaeum, Breb. St. echinatum, Breb.—St. Arachne, Ralfs.—St. Sebaldi, Reinsch. These were collected in ponds in Eastern Pennsylvania, and in New Jersey, and were not noted in previous list. The following new forms are from the same districts.

St. pulchrum, *n. sp.*—St. parvum, cytiodermate laevi vel subtilissime punctato; semi-cellulis introrsum ventricosis, dorso plus minus arcuatis vel rectilinearibus undulato-crenatis : angulis in radium lanceolatum obtusum productis, a vertice pentagoneis, angulis radiatis; radiis hastatis, .obtusis, inter basis sinu semicirculari. Diam. c. rad. .0015″–.0016″ Hab. in lacu, Brown's Mills, N. J.

St. Nova-Caesareae, *n. spec.* — St. mediocre, circiter tam longum quam latum vel paulo longius, granulatum, angulis in aculeos geminos validos subulatos longe productis ; semi-cellulis a fronte ellipticis, margine ambitu crenato-verrucosis ; a vertice quadrangularibus, angulis mammillatis, aculeo gemino imposito. Diam. sine aculeis, lat. .0015″–0016″ ; long. .0026″–.003″. Cum acul. lat. .0025″–0028″.

St. tricornutum, *n. spec.* St. magnum, tam longum quam latum, superficie laevi ; semi-cellulis late ellipticis, utroque fine in tres aculeos, achroos, diametro cellulis duplo breviores, divergentes, elongatis; dorso tribus aculeis similibus armatis; a vertice triangularibus, lateribus modo leviter concavis, modo paullum convexis, angulis in tres aculeos instructis. Diam. sine aculeis .0036″–004″; cum ac. .007″–008″.

St. macrocerum, *n. sp.* St. magnum, granulato-asperum, semi-cellulis introrsum ventricosis, dorso leniter rotundatis vel truncatis ; angulis in cornu rectum vel incurvatum provectis ; a vertice polygonis, sex-vel rarius septem-radiatis ; radiis elongatis, linearibus, achrois, apice trifido. Diam. c. rad. .0025″–0053″. Hab. in lacubus, New Jersey.

St. fasciculoides, *n. sp.* St. mediocre, dimidio circa longius quam latius, granulatum ; semi-cellulis ellipticis, dorso, rotundatis, ex ventre recte productis, et isthmum latiorem semi-diametro formantibus ; a vertice triangularibus; lateribus plerumque rectis, margine prominentiis brevibus, apice 2–4 dentato vel cuspidato, munitis ; isthmo similiter armato ; angulis truncatis, aculeis duobus vel tribus, acute conicis, instructis. Diam. lat. .00116″ ; long. .0015″.

St. subarcuatum, *n. sp.* St. mediocre, granulatum, fere tam longum quam latum, medio profunde constrictum, sinu acutangulo ampliato ; semi-cellulis a fronte visis ellipticis divergentibus, quasi obverse lunatis, granulis in series transversas ordinatis ; angulis productis bifidis achrois ; dorso papilloso angustato producto, et late truncato ; semi-cellulis a vertice visis triangularibus; angulis rotundatis brevi mucrone imposito ; lateribus aut rectis, aut leviter concavis, in medio papillis ornatis, nonnunquam productis bifidis. Diam. .0013″-.0015″.

The nearest approach to this plant is a form found in Norway, and described by Mr. Nordstedt under the name of *St. arcuatum*. The papillae are sometimes distinctly seen arranged in a circle of which 4–6 present themselves as marginate ; these are sometimes elongated and bifid.

St. comptum, n. sp. S. parvum, granulatum, sinu amplissimo ; semi-cellulis subfusiformibus, dorso convexis, isthmo cylindrico plus minus elongato conjunctis, a vertice 6 radiatis ; radiis strictis, apice subtricuspidatis. Diam. lat. 00116″ ; long. 0015″.

St. pusillum, n. sp. S. perexiguum, oblongum, rectilineare ; sinu indistincto ; angulis in cornua divergentia productis ; a vertice quadrangulare ; angulis radiatim productis. Diam. lat. .0003″ ; long. .00055″ ; cum cornu duplo longiore.

Xanthidium, Ehrb. X. Antilopaeum, Breb. *var.* triquetrum, Nordst. Similar to a form found in Brazil.—X. Arctiscon, Ehrb.=Staurastrum Arctiscon, Lund.=St. munitum, Wood.

Arthrodesmus, Ehrb.—*A. fragilis, n. sp.* A. sublaevis mediocris, profunde constrictus ; aculeis subulatis strictis ; semi-cellulis subsphaericis, vel late ovalibus (lat. 0015,″ long. 0013″) utroque fine aculeo longo recto instructis ; aculeis plerumque deciduis. Diam. cum aculeis ad .0045″. Hab. in stagnis prope Hammonton, New-Jersey ; Aug. 1879.

ZYGNEMACEAE.

Spirogyra, Link.—S. stagnalis, Hilse.—S. intermedia, Rabh.

Zygogonium, Ktz—Z. pectinatum, Ktz.

Zygnema, Ktz.—Z. leiospermum de By.

Pleurocarpus, A. Br.—*P. tenuis, n. sp.* P. cellulis diametro (0008″-001″) plerumque equalibus, rarius duplo longioribus, obscuro-viridibus vel atro-purpureis, sterilibus. Hab. in lacubus, New Jersey.

I sent this plant out when first discovered as a Zygnema. Later collections prove it to be a distinct species as named.

Vaucheria, DC.—V. racemosa, Walz. Fine specimens. Coll. by Dr. Hobby, Iowa City.

Conferva, Link.—C. tenerrima, Ktz.—C. abbreviata, Rabenh.

Rhizoclonium, Ktz.—R. fluitans, Ktz. Frequent in streams in N. J. —R. flavicans, Jürg.—R. Casparyi, Harv.

Oedogonium, Link.—O. flavescens, Hass. Atsion, N. J.—O. decipiens, Wittr. and O. crassum, Wittr. Coll. by Dr. Hobby, Ktz., Iowa City.—O. cryptoporum, Wittr., frequent.–O. stagnale, Wittr., from Bound Brook, N. J.—O. fragile. Wittr. Coll. Dr. Beardslee, Ohio, and J. D. Smith, Florida.—O. polymorphum, Wittr. & Lund, Brown's Mills, N. J.—O. laeve, Wittr. Hopatcong, N. J.—O. plusioporum, Wittr., Waterloo, N. J.—O. ciliatum, Hass, Atsion, N. J.

O. Donnelli, *n. sp.*—O. oogoniis singulis, subglobosis; oosporis echinatis, oogonia fere complentibus, globosis, echinis conicis; androsporangiis 4–10–cellularibus; nannandribus bicellularibus, paullulum curvatis, stipitatis, in cellulis suffultoriis sedentibus. Crassit. cell. veget .0023″–.0025.″ Altit. 1–2–plo major. Oogon .003″–.0033″; oospor. c. echin. .0028″–.003.″ Coll. J. D. Smith, Florida, 1879.

Bulbochaete, Ag.—B. monile, Wittr. and Lund. Hopatcong Lake, N. J.

Hormiscia, Aresch.—H. speciosa, Crouan. Brackish water near N. Y. Coll. R. Hitchcock.

Ulothrix, Ktz.—K. tenerrima, Ktz.—Coll. Dr. Hobby, Iowa.—U. compacta, Ktz. Small pool, Perth Amboy, N. J.

Microthamnion, Naeg.—M. Kützingianum, Naeg. Water troughs, etc.

Stigeoclonium, Ktz.—S. irregulare, Ktz.

Coleochaete, Breb.—C. soluta, Pringsh. Ponds, N. Jersey. Collected fine specimens in various stages of development. The young forms reflect upon the character of *Chaetococcus*, and tell a tale on forms of *Aphanochaete*, and particularly on *Horposteiron* (*Aphanochaete*) *globosa*, Nordst.

Chantransia, Fries.—C. macrospora, Wood. Hitherto found only in S. C. The large pond at Atsion, N. J., abounds with it. Along the shores, it grows on sticks, larger timbers, and the roots of trees extending into the water:

Batrachospermum.—B. vagum, Roth., is also frequent in the same pond.

§ 36. **Note on the Differences between Cyperus ovularis,** Torr., **and C. cylindricus,** N. L. Britton, (with a plate.)

In the Bulletin for August, 1879, I called attention to the fact that *Cyperus* (Mariscus) *cylindricus*, should be regarded as specifically distinct from *C. ovularis*, and not as merely a variety of the latter. I take this opportunity to figure the most marked differences between the two species on the accompanying plate. Fig. 1 is an umbel of *C. ovularis*, showing its dense globular heads; (B) is a three-flowered spikelet, and (A) an achenium of this species.

Fig. 2 represents an umbel of *C. cylindricus* with its cylindrical heads; (D) is a two-flowered spikelet, and (C) the achenium. Figures 1 and 2 are the natural size; (B) and (D) are enlarged six times, and (A) and (C) are enlarged twelve times.

The specimen of *Cyperus ovularis* from which the figures were drawn, was collected near Norfolk, Va., by Mr. H. P. Worcester; that of *C. cylindricus* I collected myself near Manchester, N. J.

I am indebted to Mr. Arthur Hollick for the beauty and accuracy of the drawings. N. L. BRITTON.

SCHOOL OF MINES, N. Y., *April* 19*th*, 1880.